

REMARKS

I. Status of the Application

In the final Office Action dated June 12, 2008, the Examiner rejected claims 1-3 and 5-16 under 35 U.S.C. § 102(b) as being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious under U.S. Patent No. 5,576,356 to Leir et al. ("Leir"). Additionally, claims 1-3 and 5-16 stand rejected under 35 U.S.C. §102(b) as being anticipated by, or in the alternative, under 35 U.S.C. 103(a) as obvious in view of U.S. Patent No. 5,258,480 and U.S. Patent No. 5,650,453, both to Eckberg et al. None of the claims have been canceled. Therefore, claims 1-3 and 5-16 remain at issue.

In the final Office Action, the examiner rejected the Declaration of Danny Charles Thompson, one of the inventors in the present application and submitted with the response to the previous Office Action, as not being sufficient to establish an inherent and unobvious difference between the present invention and that of the cited references. With this response, Applicants are submitting a revised Declaration. Applicants respectfully submit this revised Declaration is now sufficient to establish the inherent and unobvious differences between the present invention and that of the cited references. The Declaration provides detailed discussion on the recreation of the examples of the cited references. In addition, Applicants respectfully submit this Declaration overcomes all of the issues raised by the Examiner concerning the previous declaration, including, but not limited to, the silicone compositions of Eckberg, the coat weights of the examples, and the detailed procedures used to recreate the examples.

II. Rejection In View of Leir Under 35 U.S.C. §102(b) or in the Alternative, Under 35 U.S.C. §103(a)

Claims 1-3 and 5-16 stand finally rejected under 35 U.S.C. §102(b) as being anticipated by, or in the alternative, under 35 U.S.C. 103(a) as obvious in view of Leir. In order for a reference to act as a §102 bar to patentability, the reference must teach each and every element of the claimed invention. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 771 (Fed. Cir. 1983). Without the required teaching of "each and every element" as set forth in the claims, it is improper to maintain such rejections under §102(b). Leir does not teach each and every element of the claimed invention, and thus fails as an anticipatory reference. Similarly, Applicants' invention is also not obvious in view of Leir.

Leir et al. describes a radiation cured silicone release coating from solutions of relatively low levels of a polyorganosiloxane substituted with small amounts of reactive functional groups dissolved in a co-reactive monomer or mixture of monomers and containing a photoactive catalyst (col. 4, lines 25-29). The reactive diluents used in Leir have sufficiently high boiling points above about 100°C and preferably above about 150°C so as not to evaporate from the substrate before curing (col. 7, lines 12-18). Leir discusses the preparation of “solventless” epoxysilicone containing compositions to make the release silicone coatings (Examples 33 and 34); however, these preparations are not the same as the present invention in which an organic solvent is used.

The present invention is directed to release liners. In the invention, a radiation curable silicone release agent is dispersed or dissolved in an organic solvent capable of evaporation and then applied onto the surface of a substrate. The coated substrate is exposed to conditions sufficient to evaporate the solvent. In particular, the coated substrate is heated, optionally, in the presence of high velocity air, which causes the solvent to evaporate prior to curing. The substrate is then exposed to radiation to cure the silicone release coating. The result is a release liner having significantly reduced amounts of undesirable components, such as reduced total silicone extractables (measured as micrograms/square cm) and/or volatile compounds (measured in ppm). Preferably, the release liners of the invention have no more than about 10 parts per million and more preferably less than about 2.0 ppm of volatile silicone compounds in the cured product (see specification at p. 2). This release liner, having the specified properties of reduced total extractables and/or volatile organic compounds, is not taught or suggested by Leir et al.

Support for this assertion is provide in the revised Declaration included with this response. Examples 33 and 34 of Leir were re-created (see pages 4 and 5 of the Declaration), and the end products were measured for extractables, release tests and outgassing tests. As shown on page 3 of the Declaration, the total organics in the Leir Examples 33 and 34 are 57.9 ppm and 116 ppm, respectively. These levels of total volatile compounds far exceed the claimed levels of no more than 10 ppm of the present invention. Further, these claimed levels are supported by the results shown in the Declaration – 0.946 ppm and 2.04 ppm. Thus, the products of the present invention are distinct from Leir given the significantly reduced levels of extractables as compared to the examples of Leir.

In the prior Office Action, it was stated that Examples 33 and 34, although specifically recited as “solventless,” use a reactive diluent, which is deemed by the Examiner to be an organic solvent. Applicants maintain this comparison is incorrect. The reactive diluent is described as “having a sufficiently high boiling point above 100° C, preferably above about 150° C., so as **not to evaporate** from the substrate before curing.” (emphasis added) (Leir, col. 7, lines 13-18). Applicants again submit that “reactive diluent” is not the same as an “organic solvent,” and that in the present invention it is advantageous to have an organic solvent that readily evaporates. The assumption that the “reactive diluent” specifically used in the “solventless” examples of Leir, is the same as the organic solvent in the present invention, is incorrect. As Applicants have maintained, it is the evaporation of the solvent that drives off the volatile silicone compounds resulting in the significantly reduced total amounts of extractables in the present invention, which is an important feature demonstrated by the present invention and supporting Declaration. The reactive diluents in the examples of Leir are not evaporated from the substrate before curing. However, it is the driving off the solvent, which likewise drives off the undesirable low molecular weight silicone cyclics in the present application that results in a product with the desired lower levels of extractables.

Applicants respectfully submit that their claims are not anticipated by or obvious in view of the Leir reference, and further the level of low molecular weight silicone impurities claimed and discussed in their resulting product, are not inherent in the Leir product. As discussed above and detailed in the Declaration, there are significant differences between the Applicants’ product and that of Leir. The extremely low levels of extractables of the product in the present application is not inherently present in Leir, because there is no teaching or suggestion of this kind in Leir, in combination with the differences between the reactive diluent of Leir and the organic solvent in the present application. Therefore, Applicants’ invention is not inherent from the teaching of Leir.

In view of the foregoing, Applicants respectfully request that the rejection under §102(b) or alternatively, under §103(a) be withdrawn with respect to Claims 1-3 and 5-16.

III. Rejection In View of Eckberg ‘480 and ‘430 Under 35 U.S.C. §102(b) or in the Alternative, Under 35 U.S.C. §103(a)

Claims 1-3 and 5-16 stand rejected under 35 U.S.C. §102(b) as being anticipated by, or in the alternative, under 35 U.S.C. 103(a) as obvious in view of U.S. Patent No. 5,258,480 and U.S.

Patent No. 5,650,453, both to Eckberg et al. In order for a reference to act as a §102 bar to patentability, the reference must teach each and every element of the claimed invention. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 771 (Fed. Cir. 1983). Without the required teaching of “each and every element” as set forth in the claims, it is improper to maintain such rejections under §102(b). The Eckberg references do not teach each and every element of the claimed invention, and thus fail as anticipatory references. Similarly, Applicants’ invention is also not obvious in view of the Eckberg references.

Eckberg ‘480 describes the making of a silicone polymer. Specifically, Eckberg ‘480 refers to a “stripping process,” wherein heat and vacuum are used to volatilize low molecular weight silicones and unreacted vinyl epoxides. Eckberg ‘453 describes silicone coating compositions wherein certain photo-curable additives are miscible with photocurable silicone compositions. It appears to be a goal of Eckberg ‘453 to have a coating composition **absent** the presence of a solvent – “[t]he elimination of solvent is desirable for two significant reasons . . . elimination of evaporation reduces the energy requirements for preparation of the coated article.” (col. 1, lines 21-25). Thus, it appears Eckberg ‘453 actually teaches away from use of a solvent that evaporates because it is regarded as less energy efficient.

In the present Declaration, the examples of the two Eckberg references were recreated (see pages 6-8 of the Declaration). It is noted in the Declaration that the inventor, Dan Thompson, did not have access to the UV silicone compositions of Eckberg, because these compositions were made by Eckberg. Therefore, based on his extensive knowledge of this art, Mr. Thompson was able to recreate the examples using an equivalent product to the silicone compositions of Eckberg. Details of how the coatings were done is also provided. A straight comparison of the results shows that the Eckberg products contain higher levels of total outgassing components (16.3 ppm and 58.9 ppm) than the products (0.946 ppm and 2.04 ppm) of the present application. The resulting low levels of extractables and volatile silicone compounds claimed in the present application and supported by the Declaration are not present, claimed or described in either Eckberg patent. Again, as with Leir, Applicants respectfully submit that the Eckberg patents do not inherently result in the same product as the present invention, and therefore the present invention is patentable over the two Eckberg references.

IV. Conclusion

In view of the foregoing, Applicants respectfully submit that claims 1-3 and 5-16 are patentable over the cited prior art, and are in condition for allowance. Applicants respectfully request that the Examiner reconsider and withdraw the rejections of the pending claims and enter an allowance of the same. Applicants further invite the Examiner to contact the undersigned attorney to discuss any matters pertaining to the present Application.

Respectfully submitted,

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By: Monique A. Morneau
Monique A. Morneau, Reg. No. 37,893
Customer No. 1923
McDermott Will & Emery LLP
227 West Monroe, Suite 4400
Chicago, Illinois 60606-5096

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Sarah J. Goodright
Sarah J. Goodright

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